SEQUENCE LISTING

<110> Walke, D. Wade
Hilbun, Erin
Scoville, John
Friddle, Carl Johan
Hu, Yi
Turner, C. Alexander Jr.

<120> Novel Human Proteases and Polynucleotides Encoding the Same

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<150> US 60/227,104
<151> 2000-08-22

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Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
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Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
            100                 105                 110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
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Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
145                 150                 155                 160
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
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Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
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Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
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Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
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Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
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Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
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Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
65 70 75 80
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
85 90 95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
100 105 110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
115 120 125
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
130 135 140
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
145 150 155 160
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
165 170 175
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
180 185 190
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
195 200 205
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
210 215 220
Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
225 230 235 240
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
245 250 255
Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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<213> homo sapiens

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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
50 55 60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
65 70 75 80
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
85 90 95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
100 105 110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
115 120 125
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
130 135 140
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
145 150 155 160
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
165 170 175
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
180 185 190
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
195 200 205
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
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Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
            260                 265                 270
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        275                 280                 285
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
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Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu
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Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
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Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
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His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
        355                 360                 365
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
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Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
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Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
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Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
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Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
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Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
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<212> PRT
<213> homo sapiens

<400> 8

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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
    50                  55                  60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
65                  70                  75                  80
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
                85                  90                  95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
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Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
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His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
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Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
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Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
385 390 395 400
Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
405 410 415
Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
420 425 430
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
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Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
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465 470 475 480
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Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
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Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
515 520 525
Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
530 535 540
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545 550 555 560
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565 570 575
Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
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Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
595 600 605
Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
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Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp

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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
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Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
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Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
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Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
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Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
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35 40 45
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
50 55 60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
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Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
85 90 95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
100 105 110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
115 120 125
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
130 135 140
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Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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<210> 16
<211> 1235
<212> PRT
<213> homo sapiens

<400> 16

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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe
        35                  40                  45
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
    50                  55                  60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
65                  70                  75                  80
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
                85                  90                  95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
            100                 105                 110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
        115                 120                 125
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
    130                 135                 140
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
145                 150                 155                 160
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
                165                 170                 175
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
            180                 185                 190
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
        195                 200                 205
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
    210                 215                 220
Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
225                 230                 235                 240
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
                245                 250                 255
Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
            260                 265                 270
Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
        275                 280                 285
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
    290                 295                 300
Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu
305                 310                 315                 320
Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
                325                 330                 335
Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
            340                 345                 350
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
        355                 360                 365
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
    370                 375                 380
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Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
385                 390                 395                 400
Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
                405                 410                 415
Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
            420                 425                 430
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
        435                 440                 445
Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
    450                 455                 460
Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
465                 470                 475                 480
Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
                485                 490                 495
Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
            500                 505                 510
Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
        515                 520                 525
Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
    530                 535                 540
Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
545                 550                 555                 560
Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Gly Val Arg Ser Arg Ser
                565                 570                 575
Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
            580                 585                 590
Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
        595                 600                 605
Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
    610                 615                 620
Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
625                 630                 635                 640
Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
                645                 650                 655
Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
            660                 665                 670
Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
        675                 680                 685
Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
    690                 695                 700
Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu
705                 710                 715                 720
Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro
                725                 730                 735
Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His
            740                 745                 750
Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
        755                 760                 765
Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu
    770                 775                 780
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly
785                 790                 795                 800
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
                805                 810                 815
Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
            820                 825                 830
Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr
        835                 840                 845
Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
    850                 855                 860
Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
865                 870                 875                 880
His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
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                885                 890                 895
Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
            900                 905                 910
Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
        915                 920                 925
Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
    930                 935                 940
Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
945                 950                 955                 960
Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
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Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
            980                 985                 990
Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp
        995                 1000                1005
Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn
    1010                1015                1020
His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro
1025                1030                1035                1040
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys
                1045                1050                1055
Ile Ser Ser Met Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val
            1060                1065                1070
Phe Cys Gln Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr
        1075                1080                1085
His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn
    1090                1095                1100
Pro Gly Pro Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro
1105                1110                1115                1120
Gly Ser Pro Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro
                1125                1130                1135
Pro Gly Lys Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr
            1140                1145                1150
Gln Leu Pro Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro
        1155                1160                1165
Phe Ala Pro Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro
    1170                1175                1180
Thr Thr Pro Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro
1185                1190                1195                1200
Val Pro Glu Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly
                1205                1210                1215
Thr Ser Leu Pro Ala Asp Leu Pro Gly Arg Pro Pro Glu Pro Tyr Ser
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Glu Ser Asp
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<210> 17
<211> 3699
<212> DNA
<213> homo sapiens

<400> 17

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acagtgccct gcagcacaga ctttcgggga cgcttcctct ccgcacgtggt gtctggccca     180
gcagcagcct ctgcagggag catggtagtg gacacgccac ccacactacc acgacactcc     240
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cgggagctgt tccggcagcc cttacggcag gagtgtgtgt acactggagg tgtcactgga     480
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gacagcaccg acttcttcat tgagcctctg gagcggggcc agcaggagaa ggaggccagc     600
gggaggacac atgtggtgta ccgccgggag gccgtccagc aggagtgggc agaacctgac     660
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<210> 18
<211> 1232
<212> PRT
<213> homo sapiens

<400> 18
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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe

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          35                  40                  45
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
     50                  55                  60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
65                  70                  75                  80
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
                85                  90                  95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
            100                 105                 110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
        115                 120                 125
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
    130                 135                 140
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
145                 150                 155                 160
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
                165                 170                 175
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
            180                 185                 190
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
        195                 200                 205
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
    210                 215                 220
Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
225                 230                 235                 240
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
                245                 250                 255
Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
            260                 265                 270
Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
        275                 280                 285
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
    290                 295                 300
Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu
305                 310                 315                 320
Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
                325                 330                 335
Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
            340                 345                 350
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
        355                 360                 365
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
    370                 375                 380
Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
385                 390                 395                 400
Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
                405                 410                 415
Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
            420                 425                 430
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
        435                 440                 445
Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
    450                 455                 460
Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
465                 470                 475                 480
Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
                485                 490                 495
Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
            500                 505                 510
Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
        515                 520                 525
Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
    530                 535                 540
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Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
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Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Gly Val Arg Ser Arg Ser
565 570 575
Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
580 585 590
Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
595 600 605
Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
610 615 620
Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
625 630 635 640
Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
645 650 655
Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
660 665 670
Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
675 680 685
Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
690 695 700
Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu
705 710 715 720
Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro
725 730 735
Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His
740 745 750
Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
755 760 765
Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu
770 775 780
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly
785 790 795 800
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
805 810 815
Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
820 825 830
Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr
835 840 845
Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
850 855 860
Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
865 870 875 880
His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
885 890 895
Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
900 905 910
Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
915 920 925
Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
930 935 940
Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
945 950 955 960
Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
965 970 975
Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
980 985 990
Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp
995 1000 1005
Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn
1010 1015 1020
His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro
1025 1030 1035 1040
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys

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                1045                1050                1055
Ile Ser Ser Thr Glu Pro Cys Thr Gly Asp Arg Ser Val Phe Cys Gln
            1060                1065                1070
Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr His Arg Leu
        1075                1080                1085
Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn Pro Gly Pro
    1090                1095                1100
Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro Gly Ser Pro
1105                1110                1115                1120
Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro Pro Gly Lys
                1125                1130                1135
Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr Gln Leu Pro
            1140                1145                1150
Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro Phe Ala Pro
        1155                1160                1165
Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro Thr Thr Pro
    1170                1175                1180
Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro Val Pro Glu
1185                1190                1195                1200
Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly Thr Ser Leu
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Pro Ala Asp Leu Pro Gly Arg Pro Pro Glu Pro Tyr Ser Glu Ser Asp
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<210> 19
<211> 3759
<212> DNA
<213> homo sapiens

<400> 19

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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
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Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
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Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
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Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
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Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
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Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
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Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
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340 345 350
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
355 360 365
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
370 375 380
Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
385 390 395 400
Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
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Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
420 425 430
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
435 440 445
Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
450 455 460
Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
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Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
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Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
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Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
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Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
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Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
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Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu
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Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
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His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
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Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
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Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
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Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
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Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
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Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
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Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
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Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp
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His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro
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Ile Ser Ser Met Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val
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Phe Cys Gln Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr
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His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn
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Pro Gly Pro Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro
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Phe Ala Pro Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro
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Thr Thr Pro Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro
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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
    50   55   60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
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Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
                85   90   95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
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Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
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Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
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Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
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Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
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Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
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Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
            420                 425                 430
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
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Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
    450                 455                 460
Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
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Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
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Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
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Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
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545                 550                 555                 560
Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Gly Val Arg Ser Arg Ser
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Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
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Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
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Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
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Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu
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Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro
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Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His
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Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
        755                 760                 765
Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu
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Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly
785                 790                 795                 800
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
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Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
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Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr
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